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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/896,388

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Joachim P. Walser

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EXAMINER

SHERR, CRISTINA O

ART UNIT

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3685

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/896,388	Applicant(s) WALSER ET AL.	
	Examiner CRISTINA OWEN SHERR	Art Unit 3685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 and 50-71 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,6,8,10,11,14,16,18,19,22,24,26,27 and 50-71 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to Applicant's Amendment filed June 24, 2008. Claims 1-26, and 50-71 are currently pending in this case. Claims 6, 14, and 26-27, and 50-71 had been previously withdrawn from further consideration. Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 are currently under examination.

Response to Arguments

2. Applicant's arguments filed June 24, 2008 have been fully considered but they are not persuasive.

3. Applicant argues, regarding the claims that nothing in the cited reference teaches, suggests or discloses ""generating a transition graph comprising a plurality of stages, each stage representing a time interval and comprising one or more states and a plurality of paths, each path comprising a plurality of states, each state having a price value, an inventory value, and a state value, the transition graph being generated by repeating the following for the plurality of stages until a final stage is reached".

4. Examiner respectfully disagrees and directs attention to Anandalingam et al wherein, hierarchical optimization graphs are generated;

P7 maximize $F(x, y)$
=EX
subject to $y \sim Y$ such that
 $f(x, y)(y'' - y) \geq 0 \forall y'' \sim Y$.

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5. And further, the graphs generated are applied to "analysis of competitive economies through a model which enables firms to maximize profit subject to constraints on maintenance of market share" (page 8). It is obvious to one of ordinary skill in the art that constraints on market share may be replaced by similar factors such as inventory value, price value, etc as in the instant application.

6. We further note, with respect to independent claims 9 and 25, that while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function alone. MPEP 2114; *In re Swineheart*, 169 USPQ 226; *In re Schreiber*, 44 USPQ2d 1429 (Fed. Cir. 1997). In this case, we find that a system is an apparatus. While the generated graph is data, and the optimizer is software. Thus these features do not further distinguish the claim from the prior art.

7. With respect to applicant's challenge of Official notice, we direct attention to, e.g. Model/Data Comparison of Time Series Velocity at the Boston Buoy, where data is modeled and a graph generated with respect to changes over time, (<http://woodshole.er.usgs.gov/operations/modeling/mbayopen/node29.html>) .

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

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10. Based on Supreme Court precedent¹ and recent Federal Circuit decisions, § 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing.² If neither of these requirements is met by the claim(s), the method is not a patent eligible process under 35 U.S.C. § 101.

11. Note that in this particular case, independent claims 1, 9, and 25 are directed toward a system and method for generating a price schedule via certain mathematical calculations. No apparatus is cited or used, no article or materials are transformed to a different state or thing. In fact, as claims, all of these are calculations which could be done mentally without the use of any material item. Thus, independent claims 1, 9 and 25 and their dependent claims 4-7 are rejected under section 101.

12. With respect to independent claim 17, note that since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and Office personnel should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material. MPEP 2106.01 section I. Thus, independent claim 17, and its dependent claims 20-21 and 23 are rejected under section 101.

Claim Rejections - 35 USC § 103

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² The Supreme Court recognized that this test is not necessarily fixed or permanent and may evolve with technological advances. *Gottschalk v. Benson*, 409 U.S. 63, 71 (1972).

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13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anandalingam, "Hierarchical Optimization: An Introduction" (hereinafter Anandalingam).

15. Regarding claim 1-

16. Anandalingam discloses a method for generating set of constraints, the method comprising generating a transition graph comprising a plurality of stages, each stage representing a time interval and comprising one or more states and a plurality of paths, each path comprising a plurality of states, each state having a value, an inventory value, and a state value, the transition graph being generated by repeating the following for a the plurality of stages until a final stage is reached: determining the value of a successor state; calculating the inventory value of the successor state using the value and the inventory value of a predecessor state; and calculating the state value of the successor state using the value of the predecessor state; selecting a path of the plurality of paths according to the state values of the one or more states; and determining a schedule from the selected path. (e.g. pg 1, pg 2, noting that a hierarchical optimization involves repeating for K levels an optimization of each level, the constraints of one level being the start of the next level).

17. But Anandalingam fails to explicitly disclose:

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18. That the optimization is for a pricing plan.
19. That the model represents a pricing plan problem for an item group comprising a plurality of items.
20. That the optimization is used to generate an optimized pricing plan, the optimized pricing plan associating a price with each item of the item group.
21. However, the Examiner took Official Notice in the previous Office Action that it is well known to use mathematical optimization models to determine the pricing of items. Models are formulas that take input numbers and generate output numbers. The formulas themselves do not need to change based upon what the intended use of the formula is, only the input numbers. The use of a model yields predictable results no matter how the user characterizes the inputs.
22. Therefore, it would have been obvious to a person having ordinary skill in the art to use the known method of hierarchical optimization, as disclosed in Anandalingam, for the purpose of optimizing prices of items because the known method of hierarchical optimization would improve the prices of the items in a predictable way. The optimized prices would help to increase profits.
23. Regarding claims 4, 5, and 7 -
24. Anadilangam fails to explicitly disclose wherein selecting the path according to the state values comprises: determining a state at the final stage having a state value; and determining a path comprising a state of an initial stage and the state having the optimal state value and further comprising eliminating a successor state in response to

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a constraint; and determining a state at the final stage having a certainty value of a predetermined value.

25. However, the Examiner takes Official Notice that it is old and well known in the art to factor in variations over time while modeling data.

26. Therefore, it would have been obvious to a person having ordinary skill in the art to add in time constraints as one of the constraints in Anandalingam, for the purpose of making the model a more accurate depiction of reality.

27. Regarding claim 9 –

28. Claim 9 is rejected under the same criteria as claim 1.

29. Regarding claims 12, 13, and 15 –

30. Claims 12, 13, and 15 are rejected under the same criteria as claims 1, 4, 5, and 7.

31. Regarding claim 17 –

32. Claim 17 is rejected under the same criteria as claim 1.

33. Regarding claims 20, 21, and 23 –

34. Claims 20, 21, and 23 are rejected under the same criteria as claims 1, 4, 5, and 7.

35. Regarding claim 25 –

36. Claim 25 is rejected under the same criteria as claim 1.

37. Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings in the art and are

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applied to the specific limitations within the individual claim, other passages and figures may be applied as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Conclusion

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

39. Gold et al. (US 2002/0032610) disclose the generation of a price based upon various predetermined rules.

40. Reuhl et al. (US 5,873,069) disclose a system for automatic updating and display of retail prices. Prices can vary by market and location.

41. Wijaya et al. (US 7,233,914) disclose substitution rules linking the price of one item to another.

42. Ratliff et al. (US 2003/0191725) disclose the modification of the price of one item based upon the price of another item.

43. Berkovitz et al. (US 200310023567) disclose a method for dynamic pricing, including the rounding of prices.

44. McEwen et al. (US 2002/0107818) disclose a system for expression-based pricing, including pricing relationships.

45. Ouimet (US 7,020,617) discloses a strategic planning and optimization system that optimizes based upon a primary goal, then optimizes based upon auxiliary goals.

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46. Price et al. (US 2002/0082881) disclose a system providing dynamic pricing.

47. Eder (US 5,615,109) discloses a method of generating feasible, profit maximizing requisition sets using multi objective linear programming techniques. Impacts of changes are also reflected.

48. Corynen (US 6,735,596) discloses a global system optimization method using sequential multi objective decision problems.

49. Ue-Pyng Wen & Shuh-Tzy Hsu, "Linear Bi-level Programming Problems - A Review," 42 J. Operational Research Society 125 (1991) provide an overview of the well known multi-level programming case of bi-level programming.

50. Stephen J. Hoch, et al., "Determinants of Store-Level Price Elasticity," 32 J. Marketing Research, 17 (1995) provides a model for calculating price elasticity according to demand.

51. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CRISTINA OWEN SHERR whose telephone number is (571)272-6711. The examiner can normally be reached on 8:30-5:00 Monday through Friday.

52. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Calvin L. Hewitt, II can be reached on (571)272-6709. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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53. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Calvin L Hewitt II/
Supervisory Patent Examiner, Art Unit 3685